

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

Allen Doyel, Regulatory Attorney

Chesapeake Energy Corporation

P.O. Box 18496

Oklahoma City, OK 73154-0496

James B. Lebeck

Encino Energy LLC

5847 San Felipe St. Suite 300

Houston, TX 77057

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

DEC 20 2018

Re: Notice and Finding of Violation

Chesapeake Energy Corporation, et al.

Oklahoma City, Oklahoma

Dear Messrs. Doyel and Lebeck:

REPLY TO THE ATTENTION OF

The U.S. Environmental Protection Agency is issuing the enclosed Notice and Finding of Violation (NOV /FOV) to Chesapeake Energy Corporation, Chesapeake Exploration, L.L.C., Chesapeake Appalachia, L.L.C., and Encino Energy, LLC (together, Chesapeake, or you) under

Section 113(a) of the Clean Air Act, 42 U.S.C. § 7413(a). We find that you are violating and/or

have violated the Ohio State Implementation Plan, Section 111 of the Clean Air Act, and the

Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution found in 40 C.F.R. Part 60, Subpart 0000, at a number of your oil and gas production facilities located in Ohio.

Section 113 of the Clean Air Act gives us several enforcement options. These options include

issuing an administrative compliance order, issuing an administrative penalty order and bringing

a judicial civil or criminal action.

We are offering you an opportunity to confer with us about the violations alleged in the NOV.

The conference will give you an opportunity to present information on the specific findings of

violation, any efforts you have taken to comply and the steps you will take to prevent future

violations. In addition, in order to make the conference more productive, we encourage

you to

submit to us information responsive to the NOV /FOV prior to the conference date.

Please plan for your facilities' technical and management personnel to attend the conference to

discuss compliance measures and commitments. You may have an attorney represent you at this

conference. The EPA contact in this matter is Natalie Topinka. You may contact her at (312)

886-3853 or topinka.natalie@epa.gov to request a conference. You should make the request

within 10 calendar days following receipt of this letter. We should hold any conference within 30

calendar days following receipt of this letter.

Sincerely,

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Edward Nam

Director

Air and Radiation Division

Enclosure

cc: Bob Hodanbosi, OEPA

James Kavalec, OEPA

Devan Roof, OEPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGIONS

IN THE MATTER OF:

Chesapeake Energy Corporation

Chesapeake Exploration, L.L.C.

Chesapeake Appalachia, L.L.C.

Oklahoma City, Oklahoma

Encino Energy, LLC

Houston, Texas

Proceedings Pursuant to

Section 113(a)(1) of the

Clean Air Act, 42 U.S.C.

§ 7413(a)(1)

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NOTICE AND FINDING OF VIOLATION

EP A-5-19-OH-01

NOTICE AND FINDING OF VIOLATION

The U.S. Environmental Protection Agency (EPA) is issuing this Notice and Finding of Violation under Section 113(a) of the Clean Air Act (CAA), 42 U.S.C. § 7413(a). EPA finds

that Chesapeake Energy Corporation, Chesapeake Exploration, L.L.C., Chesapeake Appalachia,

L.L.C., and Encino Energy, LLC (together, Chesapeake or you) are violating Section 111 of the

CAA, its implementing regulations and the Ohio State Implementation Plan (SIP), as follows:

Statutory and Regulatory Background

1. The CAA is designed to, among other things, protect and enhance the quality of the nation's air so as to promote the public health and welfare and the productive capacity of

its population. Section 101(b)(1) of the CAA, 40 U.S.C. §7401(b)(1).

The Ohio SIP

2. Pursuant to Section 110(a)(1) of the CAA, 42 U.S.C. § 7410(a)(1), each state is responsible for submitting to EPA for approval an implementation plan which specifies how the state will achieve, maintain, and enforce all primary and secondary National Ambient Air Quality Standards (NAAQS) in the state.

3. Under Section 110(a)(2) of the CAA, 42 U.S.C. § 7410(a)(2), each SIP must include enforceable emissions limitations and other control measures, means, or techniques, as well as schedule for compliance, as may be necessary to meet applicable requirements, and must include a permit program to provide for the enforcement of these limitations, measures, and schedule as necessary to assure the NAAQS are achieved. Upon EPA's approval of a SIP, the plans become independently enforceable by the federal government, as stated under Section 113(a)(1) of the CAA, 42 U.S.C. § 7413(a)(1).

4. On January 22, 2003, EPA approved Ohio Administrative Code (OAC) 3745-31-05 (D) as part of the federally enforceable SIP for Ohio. 68 Fed Reg. 2909.

5. The Ohio SIP, at OAC 3745-31-05 (D) stated "The director may impose such special

terms and conditions as are appropriate or necessary to ensure compliance with the applicable laws and to ensure adequate protection of environmental quality. Special terms

and conditions necessary to ensure compliance with requirements mandated by the federal Clean Air Act or regulations promulgated by the administrator thereunder, including synthetic minor emissions unit conditions that restrict the stationary source's

potential to emit below major size cutoffs, shall be federally enforceable and designated

as such in the permit to install ... "

6. On February 20, 2013, EPA approved revised OAC 3745-31-05 (D) and OAC 3745-31-29 as part of the federally enforceable SIP for Ohio. 78 Fed Reg. 11748.

7. The Ohio SIP, at OAC 3745-31-05 (D)(1), allows the Director of the Ohio EPA to impose such special terms and conditions as are appropriate or necessary to ensure compliance with applicable laws and to ensure adequate protection of environmental quality. Those special terms and conditions include conditions issued in a permit to install

and operate and shall be federally enforceable.

8. The Ohio SIP, at OAC 3745-31-29 (A), allows the Director of the Ohio Environmental Protection Agency (Ohio EPA) to develop a model general permit for any category of air contaminant sources, or specific portions of any category of air contaminant sources.

9. The Ohio SIP, at OAC 3745-31-29 (A)(2), states that the general permit "shall include

terms and conditions under which the owner or operator agrees to install and/or operate the permitted air contaminant source. At a minimum, these terms and conditions shall include the following:

- (a) Applicable emission limitations and/or control requirements.
- (b) Any necessary operational restrictions.
- (c) Any necessary monitoring, reporting and recordkeeping requirements.
- (d) Testing requirements."

GP 12 Permit Program

10. The Director of Ohio EPA developed a model general permit, the GP 12 Permit, for Oil

and Gas Well Site Production Operations, that was available beginning early 2012 until April 4, 2014.

11. The GP 12 Permits include on the "Authorization" page of each permit the statement "[t]he above named entity is hereby granted this Permit-to-Install and Operate for the air

contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-

31 of the Ohio Administrative Code"

12. The GP 12 Permit, at Condition C.5, specifies that ancillary equipment is included as part

of the Emissions Unit Group for Equipment/Pipeline Leaks, FOO!.

13. The GP 12 Permit, at Footnote 7, states '"Ancillary Equipment' means the same as defined in 40 [C.F.R.] Part 63, Subpart HH."

14. Subpart HH, at 40 C.F.R. § 63.761, defines "ancillary equipment" as "any of the following pieces of equipment: pumps, pressure relief devices, sampling connections, open-ended valves, or lines, valves, flanges, or other connectors."

15. The GP 12 Permit, at Condition C.5.b), specifies the applicable emissions limitations

and/or control requirements as required by OAC 3745-31-29 (A) (2) (a) .

16. The GP 12 Permit, at Condition C.5.b) (1)a., states "emissions of Volatile Organic Compounds (VOC) ... from fugitive equipment leaks ... shall be repaired as soon as possible following detection."

17. The GP 12 Permit, at Condition C.5.d), specifies the monitoring and/or recordkeeping

requirements as required by OAC 3745-31-29 (A) (2) (c) .

18. The GP 12 Permit, at Condition C.5.d) (1)a., states:

The permittee shall develop and implement a leak detection and repair program designed to monitor and repair leaks from ancillary equipment and compressors covered by this permit. The leak detection and repair program shall include the following elements:

1. An initial and then annual inspection of the ancillary and associated equipment and compressors shall be conducted to determine if a leak exists. Leaks shall be determined through the use of an analyzer meeting U.S. EPA Method 21, 40

[C.F.R.] Part 60, Appendix A.

11. The analyzer shall be operated and maintained following the instrument manufacturer's operation and maintenance instructions.

111. A leak shall be determined if the instrument reading is equal to or greater than 10,000 ppm total VOC or the "leak detected" instrument reading required per any applicable rule.

1v. Documentation that includes the following:

(a) The date the inspection was conducted;

(b) The name of the employee conducting the leak check;

(c) The identification of any component that was determined to be leaking;

and

(d) The date the component was repaired and determined to no longer be leaking.

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19. The GP 12 Permit, at Condition C.5.d) (1)b., states that the records associated with the

leak detection and repair program shall be maintained for at least 5 years and shall be

made available to the Director or his representative upon verbal or written request.

GJ' 12.1 & 12.2 Permit Program

20. The Director of Ohio EPA developed model general permits GP 12.1 and GP 12.2 for Oil

and Gas Well Site Production Operations with a Small Flare, and for Oil and Gas Well Site Production Operations with a Large Flare, respectively. Both became effective on April 4, 2014.

21. The GP 12.1 and GP 12.2 Permits include on the "Authorization" page of each permit the

statement "The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to

Chapter 3745-31 of the Ohio Administrative Code."

22. The GP 12.1 and 12.2 Permits, at Condition C.5, specify that ancillary equipment and

associated equipment: compressors, pumps, piping, pneumatic controllers, inlet separators, gas-water/condensate/oil separators, etc. and Equipment/pipeline leaks from valves, flanges, pressure relief devices, open end valves or lines, and pump and compressor seals in VOC or wet gas service are included as part of the Emissions Unit Group for Equipment/Pipeline Leaks, FOOL

23. The GP 12.1 and 12.2 Permits, at Footnote 4, state, "'Ancillary Equipment' means the

same as defined in 40 [C.F.R.] Part 63, Subpart HH."

24. Subpart HH, at 40 C.F.R. § 63.761, states: "Ancillary equipment means any of the following pieces of equipment: pumps, pressure relief devices, sampling connection systems, open-ended valves, or lines, valves, flanges, or other connectors."

25. The GP 12.1 and 12.2 Permits, at Condition C.5.b), specify the applicable emissions limitations and/or control requirements as required by OAC 3745-31-29 (A) (2) (a).

26. The GP 12.1 and 12.2 Permits, at Condition C.5.b)(1)(a), specify the requirement to "develop and implement a site-specific leak detection and repair program for ancillary equipment as described in paragraph 5.c) (2)."

27. The GP 12.1 and 12.2 Permits, at Condition C.5.c), specify the applicable operational

restrictions as required by OAC 3745-31-29 (A) (2) (b).

28. The GP 12.1 and 12.2 Permits, at Condition C.5.c) (2), specify the Ancillary Equipment

Leak Detection and Repair Program as follows:

Ancillary Equipment Leak Detection and Repair Program.

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The permittee shall develop and implement a leak detection and repair program designed to monitor and repair leaks from ancillary equipment covered by this permit, including each pump, compressor, pressure relief device, connector, valve, flange,

vent, cover, any bypass in the closed vent system, and each storage vessel. This program shall meet the following requirements:

- a. Leaks shall be detected by the use of either a "Forward Looking Infra Red" (FLIR) camera or an analyzer meeting U.S. EPA Method 21 of 40 [C.F.R.] Part 60, Appendix A.
 - b. An initial monitoring shall be completed within 90 days of startup and quarterly thereafter for a period of four consecutive quarters (1 year).
 - c. If following the initial four consecutive quarters, less than or equal to 2.0% of the ancillary equipment are determined to be leaking during the most recent quarterly monitoring event, then the frequency of monitoring can be reduced to semiannual.
 - d. If following two consecutive semi-annual periods, less than 2.0% of the ancillary equipment are determined to be leaking during the most recent semi-annual monitoring event, then the frequency of the monitoring can be reduced to annual.
 - e. If more than or equal to 2.0% of the ancillary equipment are determined to be leaking during any one of the semi-annual or annual monitoring events, then the frequency of monitoring shall be returned to quarterly.
 - f. The program shall require the first attempt at repair within five (5) calendar days of determining a leak.
 - g. The program shall require that the leaking component is repaired within 30 calendar days after the leak is detected.
 - h. The program shall allow for the delayed repair of a leaking component following the language found in 40 [C.F.R. §] 60.5416(c)(5).
 1. The program shall following [sic] the Monitoring and Record Keeping requirements described in paragraph 5.d) of this permit.
29. The GP 12.1 and 12.2 Permits, at Condition C.5.c)(3), state, "In the event that a leak or defect is detected in the cover, closed vent system, process equipment, or control device, the permittee shall make a first attempt at repair no later than 5 calendar days after the leak is detected. Repair shall be completed no later than 30 calendar days after the leak is detected as allowed in 40 [C.F.R. §] 60.5416(c)(4). Any delay of repair of a leak or defect shall meet the requirements of 40 [C.F.R. §] 60.5416(c)(5)."
30. The GP 12.1 and 12.2 Permits, at Condition C.5.d), specify monitoring and/or recordkeeping requirements.

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31. The GP 12.1 and 12.2 Permits, at Condition C.5.d)(2), state:
Ancillary Equipment Leak Detection and Repair Program Monitoring and Record Keeping for Programs Utilizing FLIR Camera's [sic].

a. Leaks shall be determined by visually observing each ancillary component through the FLIR camera to determine if leaks are visible.

b. The following information shall be recorded during each leak inspection:

i. the date the inspection was conducted;

ii. the name of the employee conducting the leak check;

iii. the identification of any component that was determined to be leaking;

iv. the date the first attempt to repair the component was made;

v. the reason the repair was delayed following the language found in 40 (C.F.R. §) 60.5416(c) (5);

vi. the date the component was repaired and determined to no longer be leaking;

vii. the total number of components that are leaking; and

viii. the percentage of components leaking, determined as the sum of the number of components for which a leak was detected, divided by the total number of ancillary components capable of developing a leak, and multiplied by 100.

c. The permittee shall maintain records that demonstrate the FLIR camera is operated and maintained in accordance with the manufacturer's operation and maintenance instructions.

d. The records from each inspection and the dates each leak is detected and repaired shall be maintained for at least 5 years and shall be made available to the Director or his representative upon verbal or written request.

32. The GP 12.1 and 12.2 Permits, at Condition C.5.d) (3), state:

Ancillary Equipment Leak Detection and Repair Program Monitoring and Record Keeping for Programs Utilizing a Method 21 Analyzer

a. Leaks shall be measured by utilizing U.S. EPA Method 21 (40 [C.F.R.] Part 60, Appendix A). All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared

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with 500 [parts per million (ppm)] or 10,000 ppm (as applicable) for determining compliance.

b. A component is considered to be leaking if the instrument reading is equal to or greater than:

pressure relief device in gas/vapor service

pressure relief device in light liquid service

pumps in light liquid service

compressor

sampling connection system*

open ended valves or lines**

valves in gas/vapor and light liquid service

closed vent system

connectors

10,000ppm

10,000ppm

10,000 ppm

500 ppm

*

**

10,000 ppm

500 ppm

10,000ppm

all other ancillary and associated equipment in VOC service I 0,000 ppm

* must be equipped with a closed-purge, closed-loop, or closed-vent system

* * must be equipped with a cap, blind flange, plug, or a second valve

c. The following information shall be recorded during each leak inspection:

1. the date the inspection was conducted;

11. the name of the employee conducting the leak check;

111. the identification of any component that was determined to be leaking
(company ID and component type (flange, pump, etc.);

1v. the date the first attempt to repair the component was made;

v. the reason the repair was delayed following the language found in 40
[C.F.R. §] 60.5416(c)(5);

V1. the date the component was repaired and determined to no longer be
leaking;

v11. the total number of components that are leaking; and

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vm. the percentage of components leaking, determined as the sum of the
number of components for which a leak was detected, divided by the total
number of ancillary components capable of developing a leak, and
multiplied by 100.

d. The permittee shall maintain records that demonstrate the Method 21 analyzer is
operated and maintained in accordance with the manufacturer's operation and
maintenance instructions.

e. In order to calibrate the analyzer, the following calibration gases shall be used:

1. zero air, which consists of less than 10 ppm of hydrocarbon in air; and

11. a mixture of air and methane or n-hexane at a concentration of
approximately, but less than, 10,000 ppm of methane or n-hexane.

f. The records from each inspection and the dates each leak is detected and repaired shall be maintained for at least 5 years and shall be made available to the Director or his representative upon verbal or written request.

NSPS Subpart 0000

33. Section 111(b) of the CAA, 42 U.S.C. § 7411(b), requires EPA to publish a list of categories of stationary sources of air pollution if those sources cause or contribute significantly to air pollution that may reasonably be anticipated to endanger public health

or welfare, and to promulgate regulations establishing federal standards of performance for new sources within the source category. These emission standards are known as New Source Performance Standards (NSPS) and are codified at 40 C.F.R. Part 60.

34. The NSPS includes Standards of Performance for New Stationary Sources for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced After August 23, 2011, and on or before September 18, 2015, found in 40 C.F.R. Part 60, Subpart 0000 ("Subpart 0000").

35. Subpart 0000, at 40 C.F.R. § 60.5430, among other things, defines "storage vessel" as a

tank or other vessel that contains an accumulation of crude oil, condensate, intermediate

hydrocarbon liquids, or produced water, and that is constructed primarily of non-earthen

materials (such as wood, concrete, steel, fiberglass, or plastic) which provide structural

support.

36. Subpart 0000, at 40 C.F.R. § 60.5365, provides, among other things, that owners and operators of one or more storage vessel affected facilities constructed, modified or reconstructed after August 23, 2011, and on or before September 18, 2015, are subject to

the applicable provisions of Subpart 0000.

37. Subpart 0000, at 40 C.F.R. § 60.5365(e), provides that a storage vessel affected facility

is a single storage vessel located in the oil and natural gas production segment, natural

gas processing segment or natural gas transmission and storage segment, and has the

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potential for VOC emissions equal to or greater than 6 [tons per year] as determined according to this section The potential for VOC emissions must be calculated using a

generally accepted model or calculation methodology, based on the maximum average daily throughput determined for a 30-day period of production prior to the applicable emission determination deadline specified in this section. The determination may take into account requirements under a legally and practically enforceable limit in an operating permit or other requirement established under a Federal, State, local or

tribal

authority.

38. Subpart 0000, at 40 e.F.R. § 60.541 1(b), requires owners and operators of storage vessel affected facilities to ensure that covers on storage vessels meet certain requirements, including that the cover and all openings on the cover shall form a continuous impermeable barrier over the entire surface area of the liquid in the vessel;

each cover opening shall be secured in a closed sealed position except when certain activities are ongoing; and that each storage vessel thief hatch shall be equipped, maintained, and operated with a weighted mechanism or equivalent, to ensure the lid remains properly seated.

39. Subpart 0000, at 40 e.F.R. § 60.541 1(c), requires owners and operators of storage vessels using a control device to control emissions to design its closed vent system to route all gases, vapors, and fumes emitted from the material in the storage vessel to a control device that meets the requirements of 40 e.F.R. § 60.5412(c) and (d); and to design and operate a closed vent system with no detectable emissions, as determined using olfactory, visual, and auditory inspections.

40. Subpart 0000, at 40 e.F.R. § 60.5410(h), requires owners and operators of storage vessel affected facilities to demonstrate initial compliance with Subpart 0000 for each storage vessel. In order to demonstrate initial compliance with Subpart 0000, owners and operators must have completed five compliance requirements found elsewhere in Subpart 0000: determining the potential voe emission rate (40 e.F.R. § 60.5365(e)); reducing voe emissions (40 e.F.R. § 60.5395(d)); meeting certain cover, closed vent and control device requirements, as applicable (40 e.F.R. § 60.5395(e), referencing, among other things, 40 e.F.R. § 60.541 1(b) and (c)); meeting reporting requirements, including an initial armual report due no later than 90 days after the initial compliance period (40 e.F.R. § 60.5420(b)); and maintaining appropriate records (40 e.F.R. § 60.5420(c)).

41. Subpart 0000, at 40 e.F.R. § 60.5370(b), requires that at all times, including periods of

startup, shutdown, and malfunction, owners and operators shall maintain and operate any affected facility including associated air pollution control equipment in a marmer consistent with good air pollution control practice for minimizing emissions.

Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to EPA which may include but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

42. The NSPS includes Standards of Performance for New Stationary Sources for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015, found in 40 C.F.R. Part 60, Subpart OOOOa ("Subpart OOOOa").

43. Subpart OOOOa, at 40 C.F.R. § 60.5430a, among other things, defines "storage vessel"

as a tank or other vessel that contains an accumulation of crude oil, condensate, intermediate hydrocarbon liquids, or produced water, and that is constructed primarily of

non-earthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provide

structural support

44. Subpart OOOOa, at 40 C.F.R. § 60.5365a, provides, among other things, that owners and

operators of one or more storage vessel affected facilities constructed, modified or reconstructed after September 18, 2015, are subject to the applicable provisions of Subpart OOOOa.

45. Subpart OOOOa, at 40 C.F.R. § 60.5365a(e), provides that a storage vessel affected facility is a single storage vessel with the potential for VOC emissions equal to or greater

than 6 [tons per year] as determined according to this section The potential for VOC

emissions must be calculated using a generally accepted model or calculation methodology, based on the maximum average daily throughput determined for a 30-day period of production prior to the applicable emission determination deadline specified in

this section. The determination may take into account requirements under a legally and practically enforceable limit in an operating permit or other requirement established under a Federal, State, local or tribal authority.

46. Subpart OOOOa, at 40 C.F.R. § 60.5411a(b), requires owners and operators of storage vessel affected facilities to ensure that covers on storage vessels meet certain requirements, including that the cover and all openings on the cover shall form a continuous impermeable barrier over the entire surface area of the liquid in the storage

vessel; each cover opening shall be secured in a closed sealed position except when certain activities are ongoing; and that each storage vessel thief hatch shall be equipped,

maintained, and operated with a weighted mechanism or equivalent, to ensure the lid remains properly seated and sealed under normal operating conditions, including such times when working, standing/breathing, and flash emissions may be generated.

47. Subpart OOOOa, at 40 C.F.R. § 60.5411a(c), requires owners and operators of storage vessels using a control device to control emissions to design its closed vent system to route all gases, vapors, and fumes emitted from the material in the storage vessel to a

control device that meets the requirements of 40 C.F.R. § 60.5412a(c) and (d); and to design and operate a closed vent system with no detectable emissions, as determined using olfactory, visual, and auditory inspections.

48. Subpart 0000a, at 40 C.F.R. § 60.5410a(h), requires owners and operators of storage

vessel affected facilities to demonstrate initial compliance with Subpart 0000a for each

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storage vessel. In order to demonstrate initial compliance with Subpart 0000a, owners and operators must have completed six compliance requirements found elsewhere in Subpart 0000a: determining the potential VOC emission rate (40 C.F.R.

§ 60.5365a(e)); reducing VOC emissions (40 C.F.R. § 60.5395a(d)); meeting certain cover, closed vent and control device requirements, as applicable (40 C.F.R.

§ 60.5395a(e), referencing, among other things, 40 C.F.R. § 60.5411a(b) and (c));

conducting initial performance tests as required (40 C.F.R. § 60.5413a) and complying with continuous compliance requirements (40 C.F.R. § 60.5415a(e)); meeting reporting requirements, including an initial annual report due no later than 90 days after the initial

compliance period (40 C.F.R. § 60.5420a(b)); and maintaining appropriate records (40 C.F.R. § 60.5420a(c)).

49. Subpart 0000a, at 40 C.F.R. § 60.5370a(b), requires that at all times, including periods

of startup, shutdown, and malfunction, owners and operators shall maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.

Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to EPA which may include but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. The provisions for exemption from compliance during periods of startup, shutdown and malfunctions provided for in 40 CFR § 60.8(c) do not apply to Subpart 0000a.

Chesapeake's Facilities

50. Chesapeake owned and operated the facilities listed in Attachment A, at all times relevant

to this NOV/FOV until on or about November 5, 2018, when Encino Energy, LLC purchased the facilities.

51. Chesapeake's facilities listed in Attachment A were issued GP 12 and/or GP 12.1 or 12.2

permits on the respective dates indicated in the attachment.

52. In April and November 2015, and September 2017, EPA staff inspected and observed several oil and natural gas production well pads owned and operated by Chesapeake in

Columbiana and Carroll counties in northeastern Ohio. These well pads include but are not limited to those identified in Attachment A to this FOV.

53. On August 25, 2017, in correspondence with Chesapeake, EPA requested information as follow-up to a June 29, 2015 request for information issued under Section 114 of the CAA.

54. On December 6, 2017, EPA issued to Chesapeake an information request under Section 114 of the CAA.

55. In a series of submittals from February 2018 to August 2018, Chesapeake responded to

the August 25, 2017 correspondence and the December 6, 2017 information request.

Chesapeake's responses to the information request included, among other things, leak

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detection and repair monitoring data and associated records from the all the well pads listed in Attachment A.

56. In its response to the December 6, 2017 request for information, Chesapeake provided

records showing that from at least October 3, 2014 to the date of Chesapeake's response,

Chesapeake calibrated its Eagle 2 analyzers using only a gas composed of 25% LEL (Lower Explosive Limit - i.e., 50,000 ppm) for methane.

57. In its response to the December 6, 2017 request for information, Chesapeake provided

records showing at least 103 instances where well pad components were documented to be leaking but provided no associated record of final repair. These instances are listed in

Attachment A.

58. In its response to the December 6, 2017 request for information, Chesapeake provided

records showing at least 202 instances of well pad leak repairs that occurred after 30 calendar days from the date the leak was first detected. These instances are listed in Attachment A.

59. Chesapeake's storage vessels at well pads listed in Attachment A were all constructed

after August 23, 2011.

60. Chesapeake's storage vessels at all well pads listed in Attachment A had the potential for

VOC emissions equal to or greater than six tons per year as determined by the calculation

methodology prescribed by NSPS Subpart 0000, at 40 C.F.R. § 60.5395(e) or NSPS Subpart 0000a, at 40 C.F.R. § 60.5395a(e), as applicable.

61. During the September 2017 inspections, EPA staff observed and/or detected the following:

a. Emissions from thief hatches, instrumentation and/or pressure relief devices on

storage vessels at the well pads noted in Attachment A; and

b. A Method 21 analyzer being utilized by Chesapeake's LDAR staff after being calibrated with only methane gas at 2.5% by volume (25,000 ppm).

62. In discussions with EPA, representatives of Chesapeake on several occasions stated that

it uses a FLIR camera as a "screening" tool, whereby leaks detected with the FLIR are then measured with an instrument to measure the ppm concentration of the leak. Only if the leak is above the ppm threshold specified by Section C.5.d)(3)b. of the GP 12.1 or 12.2 permit does Chesapeake initiate corrective action to fix the leak.

63. In its response to EPA's August 25, 2017 correspondence requesting additional information, Chesapeake indicated that it did not monitor tanks with U.S. EPA Method 21 under its GP 12 permit.

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Violations

64. By failing to calibrate its Eagle 2 analyzer(s) with zero air, which consists of less than 10

ppm of hydrocarbon in air, and a mixture of air and methane or n-hexane at a concentration of approximately, but less than, 10,000 ppm of methane or n-hexane, Chesapeake violated the GP 12 Permit, at Condition C.5.d)(1)a.i (Method 21 calibration requirements, at 40 C.F.R Part 60 Appendix A-7, 7.1, 7.1.1, 7.1.2) and the GP 12.1 and 12.2 Permits, at Condition C.5.d)(3)(a) and C.5.d)(3)(e)(i) and (ii) at all well pads subject

to those conditions of the GP 12 or GP 12.1 and 12.2 permits, and therefore has violated

the Ohio SIP.

65. By failing to repair leaks visually observed by FLIR camera, Chesapeake violated the GP

12.1 and 12.2 Permits, at Condition C.5.c)(3) at all well pads subject to that condition of

the GP 12.1 and 12.2 Permits, and therefore has violated the Ohio SIP.

66. By failing to repair leaking components within 30 calendar days of when the leak was

detected, Chesapeake violated the GP 12.1 and 12.2 Permits, Condition C.5.c)(2)(g) at all

well pads subject to that condition of the GP 12.1 and 12.2 Permits, and therefore has violated the Ohio SIP.

67. By failing to perform a final repair of a leaking component, or to keep records of the

component's final repair, Chesapeake failed to repair leaking components as soon as possible following detection, and therefore violated the GP 12 Permit, Condition

C.5.b)(1)a at all well pads subject to that condition of the GP 12 Permit, and therefore has

violated the Ohio SIP.

68. By failing to monitor tank components via U.S. EPA Method 21 for those well pads operating under a GP 12 Permit, Chesapeake violated the GP 12 Permit, Condition C.5.d) (1)a at all well pads subject to that condition of the GP 12 Permit, and therefore has

violated the Ohio SIP.

69. Chesapeake's storage vessels at well pads listed in Attachment A are subject to NSPS

Subpart 0000 or 0000a, as applicable based on construction date. Based on the above described detectable emissions from storage vessels observed by EPA staff, Chesapeake has failed to ensure that the covers on its storage vessels at well pads indicated in Attachment A meet certain requirements, including that the covers and all openings shall

form a continuous impermeable barrier over the entire surface area of the liquid in the vessel, and that each cover opening shall be secured in a closed, sealed position except

when certain activities are ongoing, and therefore has violated 40 C.F.R. § 60.541 l(b) or

§ 60.541 la(b), as applicable determined by construction date.

70. Based on the above described detectable emissions from storage vessels observed by EPA staff, at the well pads indicated in Attachment A, Chesapeake has failed to design its

closed vent systems to route all gases, vapors and fumes emitted from the material in the

storage vessels to a control device, and to design and operate closed vent systems with no

detectable emissions, as determined using olfactory, visual, and auditory inspections, and

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therefore has violated 40 C.F.R. § 60.541 l(c) or § 60.541 la(c), as applicable determined

by construction date.

71. Based on, among other things, Chesapeake's failure to meet certain cover, closed vent

and control device requirements, demonstrated by the above described detectable emissions from storage vessels observed by EPA staff, Chesapeake has failed to demonstrate initial compliance at its storage vessel affected facilities indicated in Attachment A, and therefore has violated 40 C.F.R. § 60.5410(h) or § 60.5410a(h), as applicable determined by construction date.

72. Based on the above described detectable emissions from storage vessels observed by EPA staff during the September 2017 inspections, Chesapeake failed to operate its storage vessel affected facilities indicated in Attachment A in a manner consistent with

good air pollution control practice for minimizing emissions, and therefore has violated

40 C.F.R. § 60.5370(b) or § 60.5370a(b), as applicable determined by construction date.

Environmental Impact of Violations

73. These violations have caused excess emissions of VOC, which contributes to the formation of ground-level ozone. Breathing ozone contributes to a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen

bronchitis, emphysema, and asthma. Ground-level ozone also can reduce lung function and inflame lung tissue. Repeated exposure may permanently scar lung tissue.

Date Edward Nam

Director

Air and Radiation Division

14

Attachment A

Violations

failure to repair leak

failure to repair leak

w/in 30days

Permit Permit issue NSPS 0000/a cover

(Condition

as soon as possible

Well Pad Name and closed vent system following detection

type date C.5.c) (2) (g) of GP

provisions (paragraphs (Condition C.5.b) (1) a

68-72 of NOV /FOV)

12.1 & 12.2,

of GP 12, paragraph 66

paragraph 65 of

of NOV/FOV)

NOV/FOV)

Addy

12 1/18/2013

X 8

12.1 4/17/2018

Barnhart 12.1 10/27/2015 X 8

Bauer 12.1 6/26/2014 X 2

Bowerston 12.1 9/7/2016 X 23

Brunk

12 3/20/2013

17

12.1 3/27/2018
Bryan Shaw 12.1 5/24/2014 18
Bucey 12 8/7/2012 8
12 6/18/2012
Buell 12 7/12/2012 X 2
12.2 5/3/2018
12 8/7/2012
Burgett 8
12.1 3/8/2018
Davis Farms
12 3/28/2013
X 7
12.1 3/27/2018
Delmar
12 5/23/2013
X 9
12.2 12/23/2015
Demis 12.1 7/2/2015 X 3
Dodson
12 5/9/2013
10
12.1 4/4/2018
Edie
12 12/6/2012
X 14
12.1 10/12/2016
Ellie 12.2 9/1/2016 X 8
Fligiel
12 4/5/2013
5
12.1 3/6/2018
Garner 12.1 10/2/2014 12
Griffeth 12.1 9/1/2016 X 15
Haley 12 1/24/2013 2
Hanover Farms 12 12/27/2012 4
Helen Halter 12.1 4/2/2015 X
Holmes 12.2 10/27/2014 X 5
Jan Paul Farms 12 11/28/2012 5
Javersak

12 9/18/2013

X 1

12.1 6/5/2014

Kennedy 12.1 5/11/2015 4

Klodt 12.1 7/8/2015 X

Violations

failure to repair leak

failure to repair leak

w/in 30days

Permit Permit issue NSPS 0000/a cover

(Condition

as soon as possible

Well Pad Name type date and closed vent system following detection C.5.c) (2) (g) of GP provisions (paragraphs

12.1 & 12.2,

(Condition C.5.b) (1) a

68-72 of NOV/FOV)

paragraph 65 of

of GP 12, paragraph 66

NOV/FOV)

of NOV/FOV)

Leggett 12.1 4/2/2015 5

Marsha 12 6/25/2013 X 1

Mattie 12.1 1/27/2016 X 1

McCoy 12.1 11/20/2014 1

Our Land Co 12.1 3/8/2017 X 6

Pitts 12 9/19/2013 3

Poinsettia 12.1 6/18/2014 11

Putnam 12 5/22/2013 3

R Alan 12.1 6/25/2015 X

Ray Hayley

12 5/14/2013

X

12.1 2/22/2018

12 9/26/2013

Rogers X 4

12.1 2/16/2018

Rutledge

12 1/9/2013

X 4

12.1 5/2/2018

Sauers 12.1 5/11/2015 X 11

Schmuck Farms

12 10/1/2012

X 14

12.1 3/27/2018

Stanton 12.1 6/5/2014 X 2

Trushell 12.1 8/14/2014 X

Valdinger 12.1 5/1/2014 15

Walters

12 10/5/2012

2

12.1 3/27/2018

William Denoon 12.1 11/4/2015 X 18

William Phillips

12 9/26/2013

X

12.1 1/23/2018

Williamson 12.1 7/28/2016 1

Wright 12.1 7/8/2015 X 1

Yoder North 12.1 5/21/2014 X 4

Total 202 103

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CERTIFICATE OF MAILING

I certify that I sent a Notice of Violation, No. EPA-5-19-OH-01, by Certified Mail, Return Receipt Requested, to:

Allen Doyel, Regulatory Attorney

Chesapeake Energy Corporation

P.O. Box 18496

Oklahoma City, OK 73154-0496

and

James Lebeck

Chief Legal Officer and Secretary

Encino Energy, LLC

j lebeck@encinoenergy.com

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I also certify that I sent copies of the Notice of Violation by first-class mail to:

Bob Hodanbosi

Chief, Division of Air Pollution Control

Ohio Environmental Protection Agency

bob.hodanbosi@epa.ohio.gov

J a.mes Kavalec

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and

Devan Roof

Assistant Chief, Southeast District Office

Ohio Environmental Protection Agency

devan.roof@epa.ohio.gov

Kathy Jones

Program Technician

AECAB, PAS

CERTIFIED MAIL RECEIPT NUMBER: ']' 0\1 CX4.a:D 0~3i.o<a l'f3 LO a,